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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.



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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/537,905  
Filing Date: May 30, 2006  
Appellant(s): WAHLER, TORSTEN

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Torsten Wahler  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed on November 26, 2008 appealing from the Office action mailed March 26, 2008.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

5,779,551	STALL et al.	7-1998
6,220,115	HIRN et al.	4-2001
DE4038555A1	FISCHER	6-1992

For the above reasons, it is believed that the rejections should be sustained.

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**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer '553 in view of Stall '551. Fischer teaches a gearing comprising: a fixed, internally toothed internal gear 1, an annular, flexible toothed band 2 arranged so as to engage with the toothing of the internal gear, the toothed band having fewer teeth than the internal gear, and a rotatable wave generator 8 arranged to transmit a force to the toothed band via a tappet gear 3 such that a relative motion of the toothed band with respect to the internal gear results from a rotation of the wave generator, and a mating gear 4, and driving pins 6 shaped on a lateral face of the toothed band and arranged to engage in recesses of the mating gear (Fig. 2), wherein the axes of the wave generator and of the mating gear are parallel, and in that the recesses in the mating gear are radially extending grooves (Fig. 1; Fig. 2), wherein each groove has an outer edge and an inner edge. Fischer is silent with regard to the specific shape of the grooves (the only specificities available are the drawings that are not to scale). Stall teaches of an axial fixing assembly comprising the equivalent of driving pins 4 that are arranged to engage in recesses in a mating gear 2 (thereby rotatably locking two components together), wherein the axes of the driving pins and the mating gear are parallel, wherein the recesses in the mating gear are radially extending

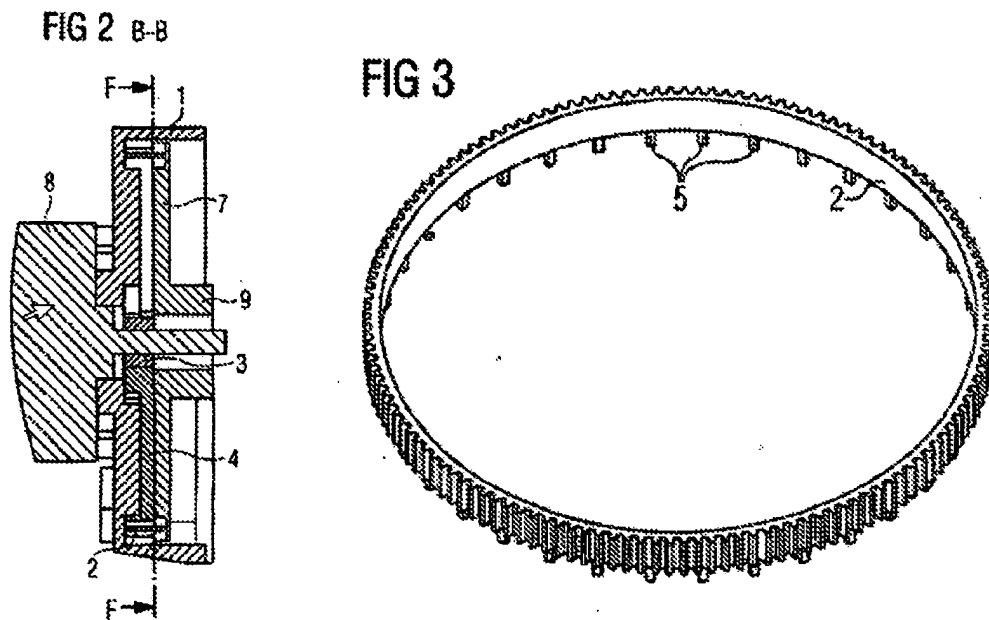
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grooves (Fig. 4a), wherein each groove has an outer edge and an inner edge, wherein a difference between the outer edge and the inner edge on a circular arc does not equal zero, and wherein the difference is selected so that an outer distance between opposing outer edges of a groove is larger than an inner distance between opposing inner edges of a groove (Fig. 4a). It would have been obvious to one of ordinary skill at the time of the invention to modify Fischer to employ the recess shape of Stall in order to provide open grooves for easier assembly.

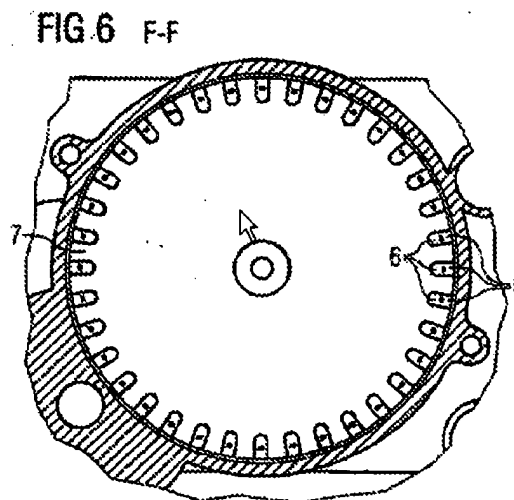
Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer in view of Stall as applied to claim 1 above, and further in view of Hirn '115. Fischer teaches the gearing, wherein the gearing components may comprise of plastic parts based on intended use and price of the gear construction (paragraph 18 of the translation), but lacks the specific teaching of using injection-molded plastid. Hirn teaches a wave generator, wherein the plastic parts are injection molded (Col. 8, lines 52-57). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Fischer to employ injection-molded plastic parts in further view Hirn in order to provide cost effective parts (Col. 8, line 57).

#### **(10) Response to Argument**

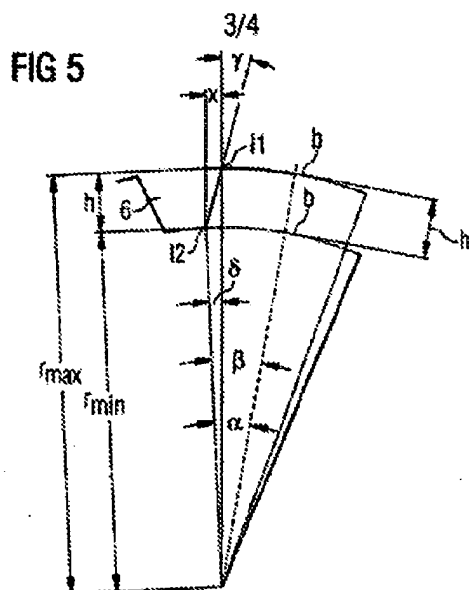
Before each of the applicant's arguments is addressed, the present invention and the applied art and the interpretations with regard to the limitations will be explained in detail.



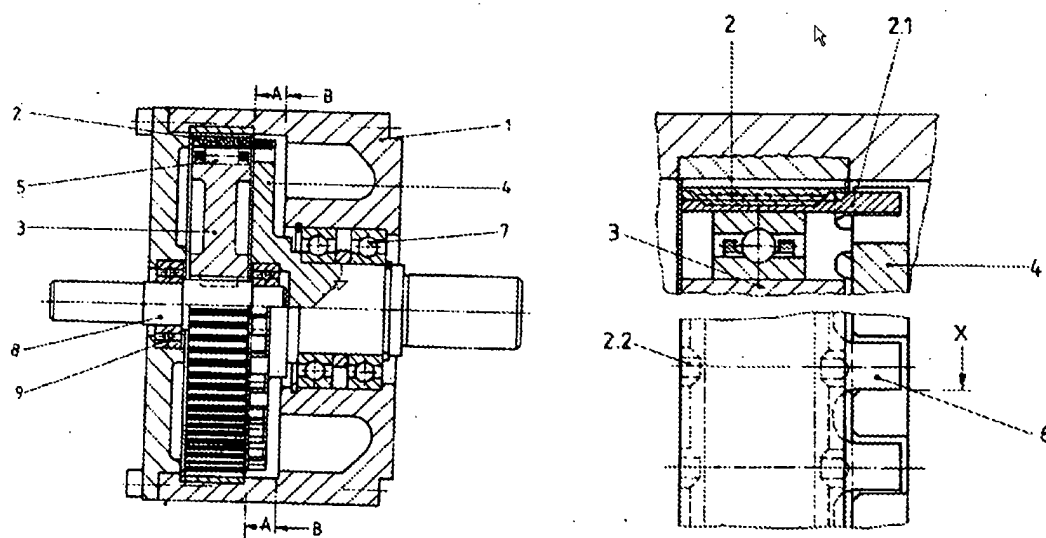
Applicant discloses a toothed band 2 which have pins 5 projecting therefrom and engaging grooves in a mating gear 7.



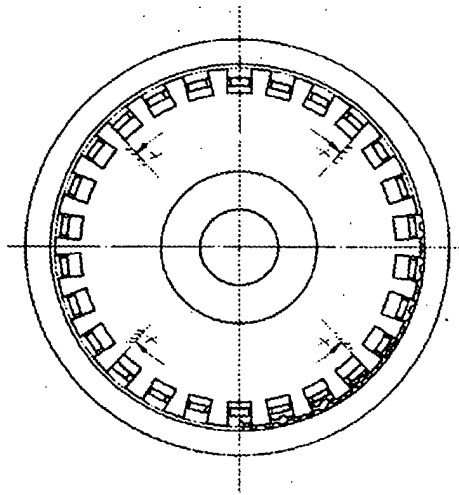
The pins engage the mating gear via grooves 6 formed on the mating gear.



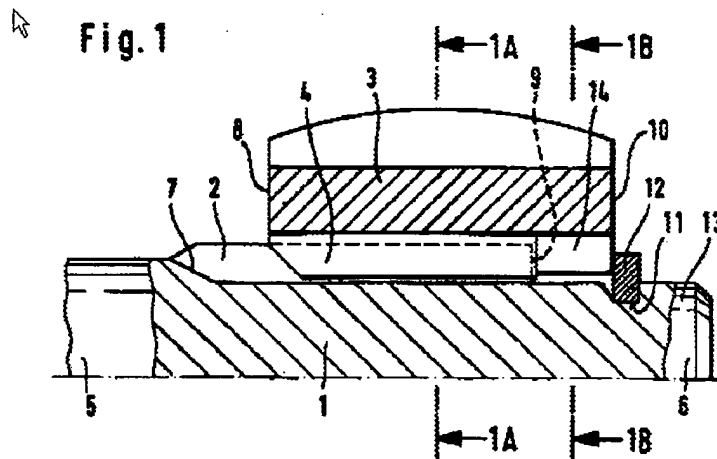
A detailed example of grooves 6 shows that the inner and outer edges do not have the same width across a radial arc.



The Fischer reference also discloses a wave gear 2 with pins 6 projecting therefrom and engaging grooves in mating gear 4.

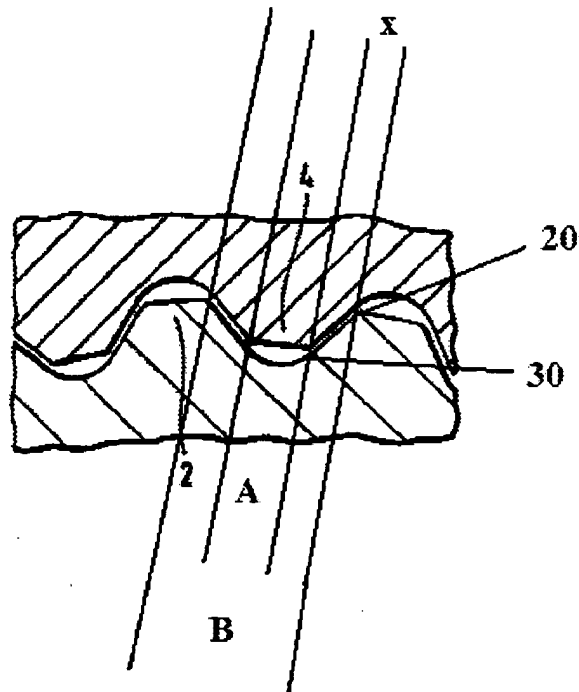


The pins sit within the grooves, but shape of the grooves are not disclosed in detail.



The stall reference has been brought in to teach of a specific groove 2 shape that would accommodate driving pins 4 that function in the same rotational locking manner. In the Stall reference, pins 4 are interpreted as axially projecting from the deformed portion 14, however the pins 4 are only used as a reference since the only teaching being incorporated is the groove of the mating gear.



**Fig. 1a**

Stall teaches the groove wherein a difference (x) between the outer edge (20) and the inner edge (30) on a circular arc does not equal zero, and the difference (x) is selected so that an outer distance between opposing outer edges (20) of a groove (B) is larger than an inner distance between opposing inner edges (30) of the groove (A).

The combination of Fischer and Stall was employed for easier assembly of the transmission. Also, the substitution of one known element for another would have yielded predictable results to one of ordinary skill at the time of the invention. In this case, one groove for rotationally locking two components was substituted for another.

Each of the Applicant's arguments will now be addressed.

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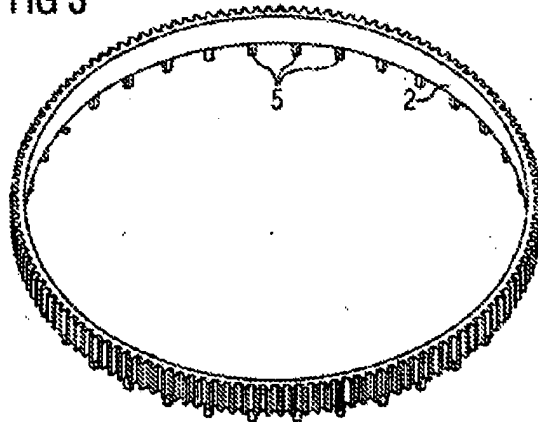
**A) Applicant argues that Fischer fails to disclose a difference between the outer edge and the inner edge on a circular arc, wherein the outer distance between the opposing outer edges of a groove is larger than an inner distance between opposing inner edges of a groove.**

Given only Fig. 4 (a drawing not drawn to scale and wherein no specifications with regard to the grooves is mentioned in the disclosure), applicant's statement is believed to be true. However, this is the reason why the Stall reference was incorporated into the 103 rejection.

**B) Applicant argues that clutch bars 6 of Fischer are not driving pins that engage in recesses of a mating gear, since clutch disc 4 is not a "mating gear" within the meaning and scope of the claimed invention.**

Applicant seems to be giving specific meaning toward "bars" and "pins." Given Figure 3 of the present invention:

FIG 3



The "pins" are not circular dowels projecting from the wave gear either. Also, a "pin" in this case need only be an extension for fastening. The clutch bars 6 of Fischer do apply.

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In claim 1, applicant has only claimed a "mating gear" without any other functional language (mating with what, etc.). Although Fischer has labeled part 4 as a "clutch-plate", the part does have a gear (teeth between the grooves), part 4 does have grooves that interlock with pins 6 that project from wave gear 2. Therefore, the limitation label of "mating gear" is applicable.

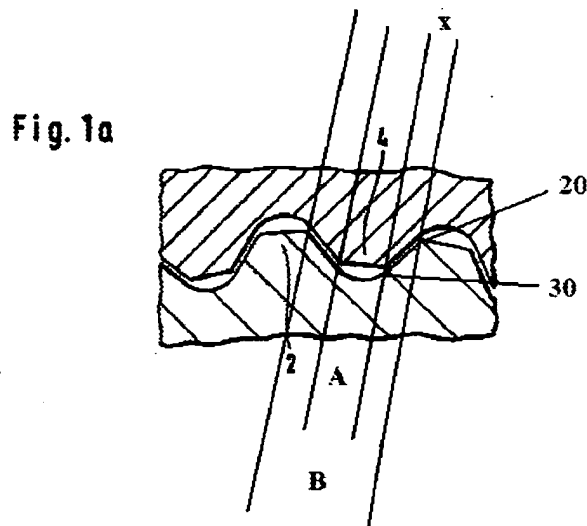
**C) Applicant argues that a trapezoidal tooth profile of Fischer in Fig. 4 yields rectangular shaped grooves. Also, one of ordinary skill would have not be able interpret how a flat or pointed tooth profile would change the groove shape.**

Again, applicant is relying on a drawing not drawn to any specific scale or shape. Given three different alternatives for indentations (flat, trapezoidal or pointed tooth), it would be obvious to one of ordinary skill in the art at the time of the invention to produce a non-square groove. However, upon further consideration, it is believed that these indentation shapes may be applicable toward the gear teeth of wave gear 2 instead of mating gear 4.

This point is moot, since the teaching of the claimed groove shape is incorporated with the combination of Stall.

**D) Applicant argues that Stall fails to teach "radially extending grooves." Instead, Stall teaches an internal gear.**

Stall teaches the same grooves as Fischer, except in a different shape. The grooves are carved axially into the mating gear, but run completely through mating gear. One can also interpret the "groove" as being carved radially into the mating gear. In both cases, the interpretation of a "radially extending groove" is legitimate.

**E) Applicant argues that Stall fails to teach an inner edge.**

Applicant does not claim the definitions of "edge." As illustrated, the inner edge may be interpreted as the point between the groove and the straight wall of the tooth. The inner edge may also be the bottom of the groove (in which case the distance between the inner edges would be zero). Given the first interpretation (as shown in the provided figure), a difference (x) between the outer edge (20) and the inner edge (30) on a circular arc does not equal zero, and the difference (x) is selected so that an outer distance between opposing outer edges (20) of a groove (B) is larger than an inner distance between opposing inner edges (30) of the groove (A).

**F) Hirn fails to teach or suggest the teeth or grooves recited in claim 1.**

Hirn teaches a wave generator wherein the parts are injection molded. The specific teaching of the wave generator structure is not being incorporated, only the materials and manufacturing process.

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**E) The examiner used impermissible hindsight to combine Fischer and Stall.**

Applicant teaches a means to interlock two rotating elements together via an axial projection (6 of Fischer and 4 of Stall). The only difference is the groove shape. Stall is combined to produce a new groove shape for easier assembly via (top or axial insertion). Also, the substitution of one known element for another would have yielded predictable results to one of ordinary skill at the time of the invention. In this case, one groove for rotationally locking two components was substituted for another.

For the above reasons, it is believed that the rejections should be sustained.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

Respectfully submitted,

/Roger L Pang/

Primary Examiner, Art Unit 3655

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